<center>**REMARKS/ARGUMENTS**</center>

Claims 1-86 and 90-92 are pending. Claims 1-3 and 20-41 are canceled without prejudice or disclaimer from further prosecution in this application. Claims 4-8, 10-19, 42-86, and 90-92 are amended. The Abstract and Specification are amended. No new matter is added by any of the amendments. Reconsideration of the application is respectfully requested.

In this response, claims 1-3 and 20-41 are canceled; claims 4-8, 10-19, 42-86, and 90-92 are amended. Applicant does not concede that the subject matter encompassed by the original claims is not patentable over the art cited in the Office Action. Applicant traverses all rejections and respectfully reserves the right to pursue the originally-presented claims, and any additional claims, in one or more continuing applications.

I.   Objection to Drawings

The Office Action objects to the drawings under 37 CFR § 1.83(a) with respect to claims 1-3, 20-30, and 58-69 as failing to show every feature specified in the claims. The cancellation of claims 1-3 and 20-30 renders the objection to the drawings with respect to these claims moot. The objection to the drawings with respect to claims 58-69, as amended, is respectfully traversed.

The Office Action objection states in pertinent part:

> Referring to claims 1-3 & 20-30 & 58-69. The applicant has claimed means for X where there are a plurality of Xs. Applicants drawings do not show every individual means for X as specified in these claims. Therefore, all of the plurality of Xs must be shown or the feature(s) canceled from the claim(s) or the claims must be cancelled.. No new matter should be entered.

Office Action dated November 2, 2007, Page 4, Paragraph 7, lines 3-6.

Claims 58-69 are amended to recite features of a data processing system comprising instructions that are executed to perform actions of a method. Additionally, the amendments to claims 58-68 include canceling the features "means for X" from the claims 58-69. The claim amendments thereby obviate the objections to the drawings. Accordingly, it is respectfully requested that the objection to the drawings be withdrawn.

II.   35 U.S.C. § 112, First Paragraph

        The Office Action rejects claims 1-6, 9-84 *sic*, and 90-92 under 35 U.S.C. § 112, first
paragraph, as failing to comply with the written description requirement. The cancellation of
claims 1-3 and 20-41 renders the rejection of these claims under this code section moot. The
rejection of claims 4-6, 9-19, 42-86 and 90-92 is respectfully traversed.

        Claims 4-6, 9-19, 42-86, and 90-92 satisfy the written description requirement of 35
U.S.C. § 112, first paragraph. The essential goal of the written description of the 35 USC § 112,
first paragraph requirement is to clearly convey the information that an applicant has invented
the subject matter which is claimed. *In re Smith*, 481 F.2d 910, 178 USPQ 620 (CCPA 1973).
The function of the description requirement is to ensure that the inventor had possession, as of
the filing date of the application relied on, of the specific subject matter later claimed by him. *In
re Wertheim*, 541 F. 2d 257, 191 USPQ 90 (CCPA 1976). The primary role of the written
description is to support the claims, assuring that persons skilled in the art can make and use the
claimed invention. *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 71 USPQ2d
1545 (Fed. Cir. 2004). The written description inquiry is based on an inquiry of whether the
subject matter defined in the claims is described in the specification. *University of Rochester v.
G.D. Searle*, 358 F.3d 916, 69 USPQ2d 1886, 1890 (Fed. Cir. 2004).

        In the *Response to Office Action* filed April 2, 2007, the rejected claims are painstakingly
correlated to the supporting sections of applicant's disclosure. *See Response to Office Action* of
April 2, 2007, Section I, pages 20-28. Nevertheless, the Office Action maintains the rejection
and states in pertinent part:

>   The examiner respectively disagrees with the applicant argument that the
>   112 1st paragraph rejection has been traversed. The applicant clearly
>   explained where entry containing target map is defined. The applicant did
>   not provide any factual evidence showing where in the specification that
>   the applicant defined where "relation computation using the table index
>   and the target address as **operand"** is defined.

Office Action dated November 2, 2007, page 32, paragraph 10, third paragraph

        Supplemental information from the disclosure that provides further evidentiary support
states in support of compliance with the written description states:

>   The target to be associated with an entry in the targetMap table is based
>   on a "nearness" calculation. For 25 each index in the targetMap table, the
>   index value is computed against each target identifier in the target set
>   using nearness function 314. The **nearness function receives as inputs**:

(1) a unique identifier representing an entry within the targetMap, such as an array index or table index; 30 and (2) a target identifier. **The results of the nearness function computation produces a single, best value** for a particular combination of the target identifier and the index position.

Specification, page 16, line 23 to page 17, line 2 (emphasis added).

The term "operand" may not be explicitly used in the specification, but it is indeed an applicable term in the claims for the inputs of the nearness function, *i.e.*, the table index and a target identifier. "[T]he words of a claim are generally given their ordinary and customary meaning." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1327 (Fed. Cir. 2005) (citing *Vitrionics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 39 USPQ2d 1573). The ordinary and customary definition of the term operand is "An **operand** is one of the inputs (arguments) of an operator in mathematics." *Wikipedia*, March 13, 2009. Therefore, the table index and the target identifier as inputs to the nearness function computation represent or at least *function as operands* in the "nearness" function calculation.

The written description inquiry of whether the subject matter defined in the claims is described in the specification is a factual and application specific determination. Here, in this case, an overwhelming amount of evidence shows support for the claims and is more than sufficient to allow **persons of skill in the database art** to make and use the claimed invention. Although the claims of the disclosure may use synonymous terminology, the claims are nevertheless fully supported by the disclosure. The written description requirement is satisfied by disclosure of such descriptive means as words, structures, figures, diagrams, formulas, etc., that fully set forth the claimed invention. *Enzo Biochem Inc. v. Gen-Probe*, 296 F.3d. 1316, 63 USPQ2d 1609, 1617 (Fed. Cir. 2002).

Accordingly, based on the foregoing, it is respectfully requested that the rejection of claims 4-6, 9-19, 42-86, and 90-92 under this code section be withdrawn.

III.   35 U.S.C. § 112, Second Paragraph

The Office Action rejects claims 1-6, 9-84 *sic*, and 90-92 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter, which applicants regard as the invention. The cancellation of claims 1-3 and 20-41 renders the rejection of these claims under this code section moot. The rejection of claims 4-6, 9-19, 42-86, and 90-92, as amended, is respectfully traversed.

The claims provide sufficient meaning to satisfy the requirement of 35 U.S.C. § 112, second paragraph. "The requirement to 'distinctly' claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. . . . Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court [Examiner] declare it indefinite." *Metabolite Labs, Inc. v. Lab. Corp. of Am. Holdings*, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004).

In the *Response To Office Action* of April 2, 2007, further clarification of the scope of the claims is provided. *See, Response To Office Action* of April 2, 2007, Section II, pages 28-29. Nevertheless, the Office Action maintains the rejection of the claims under 35 U.S.C. § 112, second paragraph and states in pertinent part:

> The examiner respectively disagrees with the applicant argument that the 112 2nd paragraph rejection has been traversed. The applicant has acted as a lexicographer and created a claim limitation for "relation computation using the table index and the target address as operand". The applicant has not provided any prior art reference which shows how one of ordinary skill in the art at the time of the invention would know exactly what this claim limitation means. The examiner asserts that applicant's specification lacks antecedent basis in defining what the relationship means.

Office Action dated November 2, 2007, page 32, paragraph 10, fourth paragraph.

Supplemental information from the disclosure that provides further evidentiary support that the claims comply with 35 USC 112, second paragraph states:

> The target to be associated with an entry in the targetMap table is based on a **"nearness" calculation**. For each index in the targetMap table, the index value is computed against each target identifier in the target set using nearness function 314. The **nearness function** receives as inputs: (1) a unique identifier representing an entry within the targetMap, such as an array index or table index; 30 and (2) a target identifier. The results of the **nearness function computation** produces a single, best value for a particular combination of the target identifier and the index position.

Specification, page 16, line 23 to page 17, line 2 (emphasis added).

The term "operand" may not be explicitly used in the specification, but it is indeed an applicable term in the claims for the inputs of the nearness function, *i.e.*, the table index and a target identifier. "[T]he words of a claim are generally given their ordinary and customary meaning." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1327 (Fed. Cir.

2005) (citing *Vitrionics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 39 USPQ2d 1573). The ordinary and customary definition of the term operand is "An **operand** is one of the inputs (arguments) of an operator in mathematics." *Wikipedia*, March 13, 2009. Therefore, the table index and the target identifier as inputs to the nearness function computation represent or at least *function as operands* in the "nearness" function calculation.

Accordingly, based on the foregoing, the claims are definite and it is respectfully requested that the rejection of the claims under this code section be withdrawn.

IV.   **35 U.S.C. § 101**

The Office Action rejects claims 31-41 and 74-84, *sic*, under 35 U.S.C. § 101 as being directed to non-statutory subject matter. The cancellation of claims 31-41 renders the rejection of these claims under this code section moot. The rejection of claims 74-86, as amended, is respectfully traversed.

The Office Action rejection states in pertinent part:

> Referring to claims 31 & 74, the applicant is claiming a computer program product and the rest of the preamble has been treated as intended use. The steps defined after comprising do not breathe life in to the claims nor do they provide any interrelationship description for the computer program product. A computer program product is software which falls under the category of a judicial exception which is non-statutory subject material and therefore is not patentable. This same argument also applies to the dependent claims associated with these two independent claims.

Office Action dated November 2, 2007, page 4 paragraph 6, second full paragraph.

The claims are amended to recite "a computer readable medium including instructions, which when executed in a data processing system" perform certain actions. Accordingly, the claims may no longer be construed as intended use. Further, the claims now include concrete relations between the computer program product, computer readable media and executable instructions.

Accordingly, the rejection of claims 74-84, *sic* is obviated. It is therefore respectfully requested that the rejection of claims 74-84, *sic* under 35 U.S.C. § 101 be withdrawn.

V.   35 U.S.C. § 102(a)

The Office Action rejects claims 9-11, 14-16, 20-22, 25-27, 31-33, 36-38, 42-44, 47-54, 58-60, 63-70, 74-76, and 79-86 under 35 U.S.C. § 102(a) as being anticipated by Applicant's Admitted Prior Art ("*Admitted Prior Art*"). The cancellation of claims 20-22, 25-27, 31-33, and 36-38 renders the rejection of these claims under this code section moot. The rejection of claims 9-11, 14-16, 42-44 and 47-54, 58-60, 63-70, 74-76, and 79-86 is respectfully traversed.

Claims 9-11, 14-16, 42-44, 47-54, 58-60, 63-70, 74-76, and 79-86 do not read on the *Admitted Prior Art*. The *Admitted Prior Art* consists of pages 1-6, Figures 2A-2D and the description thereof in the disclosure. It is well-settled that anticipation under 35 U.S.C. § 102 requires that the prior art reference teach every element of the claim. For example, a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Additionally, all limitations of the claimed invention must be considered when determining patentability. *In re Lowry*, 32 F. 3d 1579, 1582, 32 USPQ2d 1031, 1034 (Fed. Cir. 1994).

Nowhere in the *Admitted Prior Art* is there disclosed, either expressly or inherently, any novel claim feature recited in the claims rejected under this code section. The disclosure recites the novel feature a mapping algorithm, specifically, a nearness function, that provides the mapping of entries for a dynamically varying target set in a data processing system. Claim 9 is representative and recites:

> 9.   A method in a data processing system for mapping a source identifier to a target identifier, the method comprising the steps of:
>   hashing the source identifier to determine a table index into a table in a computer readable medium; and
>   reading the target identifier from a table entry using the table index, wherein the target identifier has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target identifier as operands in the relation computation.

One novel feature recited in claim 9 provides "reading the target identifier from a table entry using the table index, wherein the target identifier has been related to and stored in the table entry based on a computed value from a relation computation using the table index and a target identifier as operands in the relation computation."

The Office Action earnestly attempts to correlate the *Admitted Prior Art* to this novel feature. However, the *Admitted Prior Art* does not teach the novelty of a **computer value using**

the table index and the target identifier as operands. Further, the *Admitted Prior Art* does not teach a **relation computation** using the designated operands. The *Admitted Prior Art* in this case only provides the background for the disclosure and the details disclosed in this background are distinct from the detailed description of the disclosure that discloses the novel features on which the claims are based. In sum, the background of the disclosure merely describes the current state of the art and is devoid of any novel features recited in the claims.

The 35 U.S.C. § 102 statute and associated case law unambiguously establishes that the prior art reference anticipates a claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. *In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990). The *Admitted Prior Art* does not teach the novel features of the claims. Therefore, based on the foregoing analysis, the *Admitted Prior Art* does not anticipate the claims and it is therefore respectfully requested that the rejection of the claims under this code section be withdrawn.

VI.   35 U.S.C. § 103, Obviousness
VI.A. Claims 1-8, 17, 18, 28, 29, 39, 40, 55, 56, 58, 71, 72, and 90-92

The Office Action rejects claims 1-8, 17, 18, 28, 29, 39, 40, 55, 56, 58, 71, 72, and 90-92 under 35 U.S.C. § 103(a) as being obvious over *Admitted Prior Art* in view of *Callon et al.* ("*Callon*"), U.S. Patent 6,643,287. The cancellation of claims 1-3, 28, 29, 39 and 40 from further prosecution in this response renders the rejection of these claims under this code section moot. The rejection of claims 4-8, 17, 18, 55, 56, 58, 71, 72, and 90-92 is respectfully traversed because the Office Action fails to establish a *prima facie* case of obviousness.

The *Admitted Prior Art* and *Callon*, in combination or individually, do not teach or fairly suggest the novel claim features recited in the claims. It is well-settled that to establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981,985, 180 USPQ 580 (CCPA 1974). Further, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).
Claim 4 is representative and recites:

4.   A routing method in a data processing system comprising the steps of:

   receiving a data packet;

   retrieving a destination address from the data packet;

   hashing the destination address to determine a table index into a table in a computer readable medium;

   reading a target address from a table entry using the table index, wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation;

   modifying the data packet by storing the target address in the data packet as a next-hop destination address; and

   transmitting the modified data packet.

Claim 4 recites the novel feature "reading a target address from a table entry using the table index, wherein the target address has been related to and stored in the table entry based on a computer value from a relation computation using the table index and the target address as operands in the relation computation." As previously analyzed, *supra*, the *Admitted Prior Art* does not teach or suggest this novel claim feature. *Callon*, in combination with the Admitted Prior Art, or singularly, does nothing to cure the deficiency of the Admitted Prior Art.

Callon is directed to routing the traffic of packets to a network based on the contents of the headers attached to the packet. *Callon* performs hash operations. *Callon* does not read on the claim feature that recites "reading a target address from a table entry using the table index, wherein the target address has been related to and stored in the table entry based on a computed value from a relation computation using the table index and the target address as operands in the relation computation." Therefore, *Callon* is not relevant to the feature of performing nearness calculations through the operation of nearness functions that provide optimum associations between a target and a targetMap entry.

Claim 7 provides the novel feature of "wherein a processing speed with which the source identifier is mapped to the mapped target identifier is constant and independent of a total number of target identifiers in the set of target identifiers." The collective and individual teachings of the *Admitted Prior Art* and *Callon*, do not disclose or suggest a processing speed that is stable or constant and independent of a total number of target identifiers.

Nevertheless, the Office Action relies on the *Admitted Prior Art* as disclosing or suggesting this feature. The Office Action states in pertinent part:

The Admitted Prior teaches: Hash function performs the processing in parallel per Fig 2D. It would have been obvious to one of ordinary skill in the art at the time of the invention that the processing speed with which the source identifier is mapped to the mapped target identifier is independent of a total number of target identifiers in the set of target identifiers because the processing is performed in parallel.

Office Action dated November 2, 2007, page 9, lines 17-21.

The figure referenced in the Office Action citation, FIG. 2D, is reproduced below.
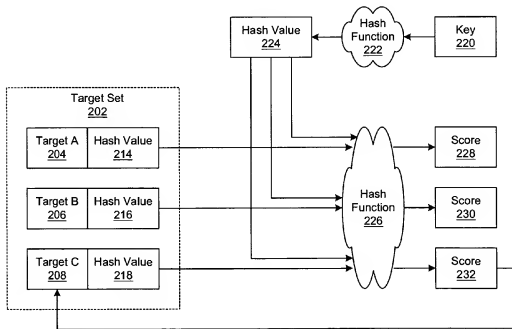
However, it is unclear, at best, and fanciful reasoning, at a minimum to conclude that FIG. 2D, with it various connective relations, illustrates "parallel processing." Further, the text of the specification describing FIG. 2D mentions nothing regarding "parallel processing." The specification discloses, for example:

Figure 2D illustrates a series of steps in which a key, such as a URL, is mapped to a particular proxy server in the target set through a type of hash routing provided by CARP.

Specification, page 14, lines 1-3.

A series of steps may not even be tangentially related to a feature that requires "parallel processing." Accordingly, since the *Admitted Prior Art* and *Callon* do not teach or suggest all the features of the claims, a conclusion of *prima facie* obviousness cannot be sustained. "*Rejections on obviousness grounds cannot be sustained by mere conclusory statements;* instead,

there must be some articulated reasoning with some rational underpinning to support the *legal conclusion* of obviousness." *KSR Int'l. Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007) (emphasis added) (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006)).

Claims 5, 6, 8, 17, 18, 55, 56, 58, and 90-92 contain similar limitations and therefore the same rationale expressed, *supra*, applies. Accordingly, based on the foregoing, it is respectfully requested that the rejection of claims 4-8, 17, 18, 55, 56, 58, 71, 72, and 90-92 under 35 U.S.C. § 103(a) be withdrawn.

VI.B. Claims 12, 13, 19, 23, 24, 30, 34, 35, 41, 45, 46, 57, 61, 62, 73, 77, and 78

The Office Action rejects claims 12, 13, 19, 23, 24, 30, 34, 35, 41, 45, 46, 57, 61, 62, 73, 77, and 78 under 35 U.S.C. § 103(a) as being obvious over *Admitted Prior Art*. The cancellation of claims 23, 24, 30, 34, 35, and 41 from further prosecution renders the rejection of these claims under this code section moot. The rejection of claims 12, 13, 19, 45, 46, 57, 61, 62, 73, 77, and 78 is respectfully traversed because the Office Action fails to establish a prima facie case of obviousness.

The *Admitted Prior Art* does not teach or suggest the subject matter of dependent claims 12, 13, 19, 45, 46, 57, 61, 62, 73, 77, and 78. Nevertheless, the Office Action adopts a broad brush approach and takes Official Notice of all the features recited in these claims thereby eschewing any objective and concrete evidence on which to base a conclusion that the claimed features would be obvious to one of ordinary skill in the art.

Claim 12 is representative and recites:

12.   The method of claim 10, further comprising:
    dynamically removing a target identifier from a set of target identifiers to obtain a modified set of target identifiers;
    for each table entry previously related to the removed target identifier, newly relating a target identifier from the modified set of target identifiers to a table entry such that each table entry is related with only one target identifier; and
    for each table entry previously related to the removed target identifier, storing in a table entry its newly related target identifier.

The Office Action perfunctorily rejects the claim stating:

Referring to claim 12, the Admitted Prior Art teaches: the method of claim 10

    The Admitted Prior Art does not expressly call for: further comprising dynamically removing a target identifier from a set of target identifier to obtain a modified set of target identifiers for each table entry previously related to the removed target identifier newly relating a target identifier

from the modified set of target identifier to a table entry such that each table entry is related with only one target identifier and for each table entry previously related to the removed target identifier storing in a table entry it newly related target identifier. The examiner takes official notice: updating tables to reflect network changes by a network administrator are well known in the art. It would have been obvious to one of ordinary skill in the art at the time of the invention to have a network administrator update the table to the system of the admitted prior art in order for the system to scale to network changes which would result in the claim limitation above.

Office Action dated November 2, 2007, page 26, lines 5-16.

However, the taking of Official Notice to reject the details of claim 12 is erroneous in this case. It is well-recognized that it is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001). Assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970).

Accordingly, it is respectfully requested that the taking of Official Notice of the recited claim features be withdrawn or, alternatively, citations to specific reference works be provided to support the rejection of claim 12 and the other rejected claims including similar features, *to wit*, claims 13, 19, 45, 46, 57, 61, 62, 63, 77 and 78 as obvious under 35 U.S.C. § 103.

Claims 12, 13, and 19 depend from independent claim 9; claims 45, 46 and 57 depend from independent claim 42; claims 63 and 73 depend from independent claim 58, and claims 77 and 78 depend directly or indirectly from independent claim 74. The analysis, *supra*, provides substantial evidence that the *Admitted Prior Art* does not read on independent claims 9, 42, 58, and 74. Therefore, at least based on this dependent relationship, claims 12, 13, 19, 45, 46, 57, 63, 73, 77 and 78 are not obvious over the *Admitted Prior Art*. "Dependent claims are non-obvious if the independent claims from which they depend are nonobvious." *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1785 (Fed. Cir. 1992).

It is therefore respectfully requested that the rejection of claims 12, 13, 19, 45, 46, 57, 61, 62, 73, 77 and 78 under this code section be withdrawn.

VII.   Conclusion

The subject application is patentable over the cited references of *Admitted Prior Art* and *Callon* and is now in condition for allowance, a notice of which is respectfully requested. Alternatively, it is respectfully requested that this application, pursuant to a decision that grants the *Petition to Revive*, be **transferred** to an art class that may be more relevant to this application, such as class 707 "Data Processing: Database And File Management Or Data Structures," for further prosecution.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite prosecution or aid the examination of this application.

DATE: July 8, 2009

Respectfully submitted,

/A. M. Thompson/

A. M. Thompson
Reg. No. 59,673
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Practitioner for Applicant